

Name: _____

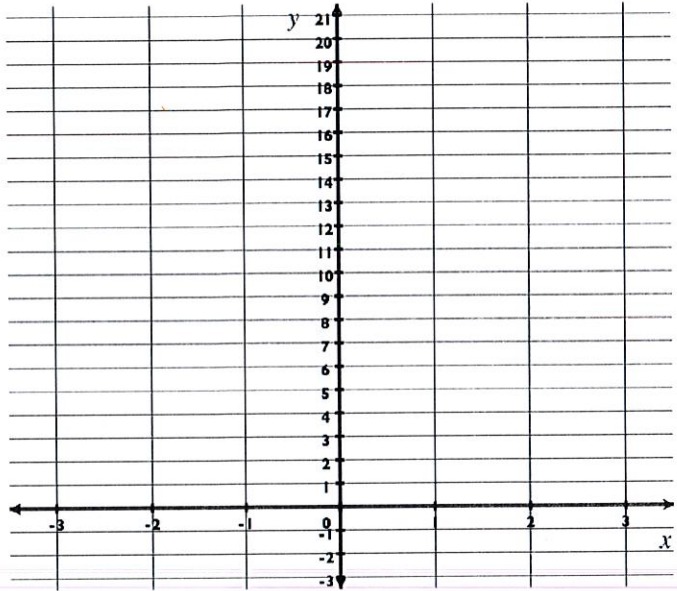
Date: _____

Growth vs. Decay

Directions: Make a table and graph each function.

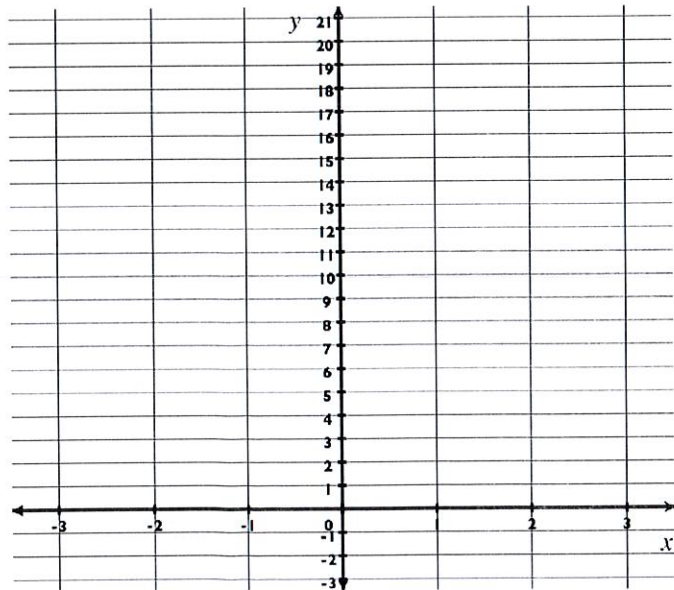
$$f(x) = 6\left(\frac{5}{3}\right)^x$$

x	y
-2	
-1	
0	
1	
2	



$$f(x) = 8\left(\frac{1}{2}\right)^x$$

x	y
-2	
-1	
0	
1	
2	

**Key Question:** Why does one of these graphs **increase** while the other one **decreases**?**Exponential Decay:**

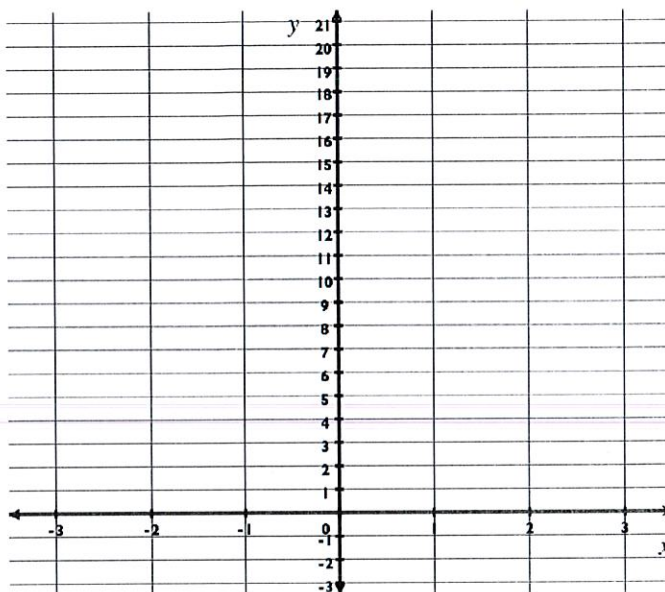
Spot the Decay!

Directions: Circle each function that is an example of **exponential decay** (there are exactly **five** of them). Graph each of these decay functions only.

$f(x) = 2(4)^{-x}$	$f(x) = 3(5)^x$	$f(x) = 6\left(\frac{2}{3}\right)^x$	$f(x) = 5\left(\frac{3}{2}\right)^x$
$f(x) = 9^{-x}$	$f(x) = \left(\frac{7}{2}\right)^{-x}$	$f(x) = 2\left(\frac{1}{4}\right)^{-x}$	$f(x) = 5\left(\frac{1}{3}\right)^x$

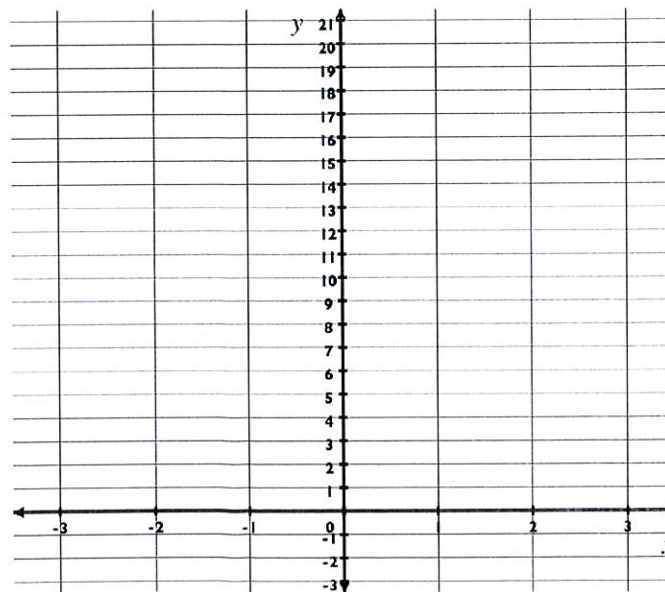
1)

x	y
-2	
-1	
0	
1	
2	



2)

x	y
-2	
-1	
0	
1	
2	

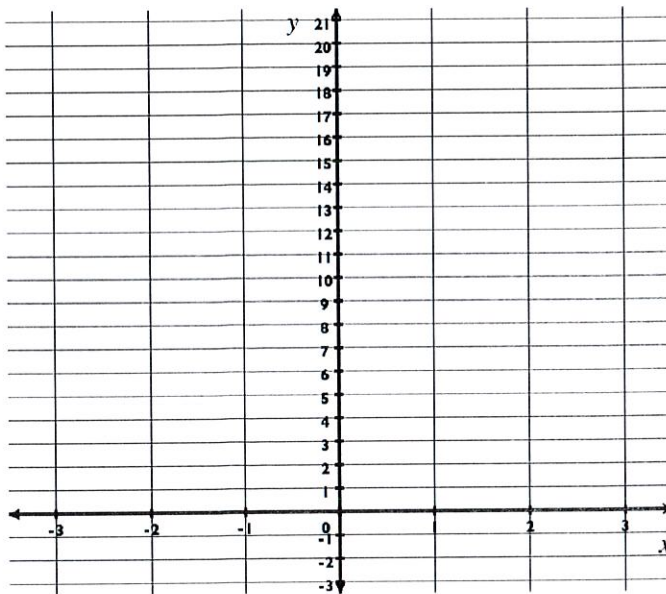


Algebra 2

Exponents Day 32: Graphing Exponential Decay Functions

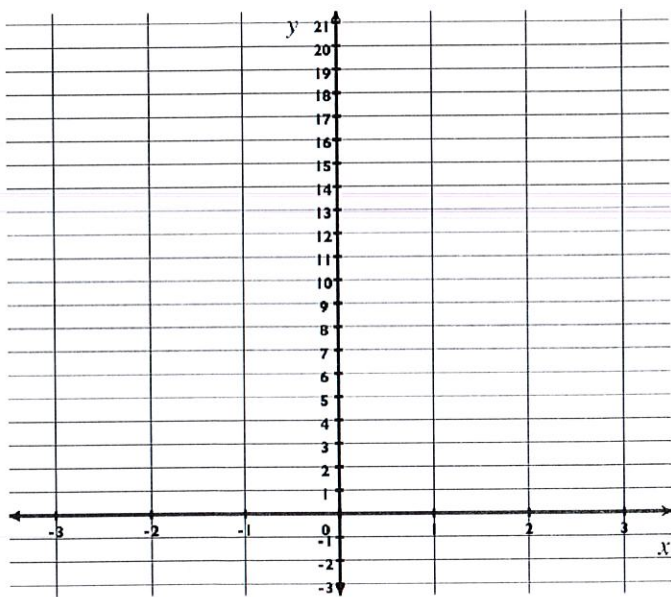
3)

x	y
-2	
-1	
0	
1	
2	



4)

x	y
-2	
-1	
0	
1	
2	



5)

x	y
-2	
-1	
0	
1	
2	

